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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/193,597

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EXAMINER

CHRISTENSEN, A

ART UNIT

PAPER NUMBER

2712

DATE MAILED:

08/16/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/193,597

Applicant(s)
Lichtman

Examiner
Andy Christensen

Group Art Unit
2712



☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-27 is/are pending in the application

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-27 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1-19 and 26-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said side wall" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitations "said free end" in line 2, "said drive shaft" in line 3 and "said worm gear" in line 3. There is insufficient antecedent basis for these limitations in the claim.

Claim 6 recites the limitation "said longitudinal axis" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "said first longitudinal axis" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitations "said first mentioned bore" in lines 2-3, "said free end" in line 4, said "drive shaft" in line 4, and "said second bore" in line 5. There is insufficient antecedent basis for these limitations in the claim.

Claim 11 recites the limitation "said first and second windows" in line 14. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "said spring" in line 3. There is insufficient antecedent basis

for this limitation in the claim.

Claim 17 recites the limitation "said second connecting means" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 19 recites the limitation "the distal and proximal ends of said bore" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 26 is vague in that the term "pneumatically" is improperly used, since the remaining claim limitations have nothing to do with a pneumatic operation and the specification does not disclose such an operation.

Claim 26 recites the limitation "said output shaft" in line 27. There is insufficient antecedent basis for this limitation in the claim.

Claim 27 recites the limitations "said first connecting means" in line 2 and "second connecting means" in line 3. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 5, 6, 9-11 and 15-25 are rejected under 35 USC 103(a) as being unpatentable

over Dennison, Jr. et al. (U.S. Patent No. 5,212,595) in view of Ohsawa (U.S. Patent No. 4,905,668).

Regarding Claim 1, Dennison, Jr. et al. disclose a focusing device comprising the recited housing (23), first attaching means (12), second attaching means (15), cavity and opening (28); a tubular lens carrier (40) with open distal and proximal ends, containing the recited focusing lens (44) and being slidably disposed in the bore (Figure 2); whereby an image captured by the image capturing device and relayed by the focusing lens may be focused on an image receiving device by movement of the lens carrier.

Dennison, Jr et al. do not disclose that the device is motorized with the outer surface of the lens carrier being characterized by a longitudinally-aligned series of rack gear teeth. However it is well known in the art to perform focusing using such a configuration as disclosed in Ohsawa (See Figure 1, where a motor assembly, gear means and rack gear teeth are disclosed). A motorized focusing arrangement, such as in Oshawa, clearly would provide an easier and more accurate focusing operation than that provided in Dennison, Jr. et al. since operation of a motor is clearly easier and more accurate than operation of a rotation sleeve, as in item 100 of Dennison, Jr. et al. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide in Dennison, Jr. et al. the recited rack gear teeth, motor assembly and gear means in order to improve the operability of the device and increase its focusing accuracy.

Regarding Claim 5, Dennison, Jr. et al. and Oshawa disclose that the gear means comprise

a worm gear axially attached to a free end of a drive shaft such that a portion of the worm gear meshes with the rack gear teeth on the outer surface of the lens carrier (Oshawa; See Figure 1). In the combination of Dennison, Jr et al. and Oshawa it would have been obvious to arrange the motor and worm gear so that a portion of the worm gear would extend through the opening since the movement mechanism (60) in Dennison, Jr. et al. is so configured.

Regarding Claim 6, the lens carrier in Dennison, Jr. et al. has a longitudinal axis (See Figure 2). In Oshawa the drive shaft extends parallel to the longitudinal axis of the lens carrier. Therefore in the combination of Dennison, Jr. et al. and Oshawa it would have been obvious to arrange the drive shaft so as to extend parallel to the longitudinal axis of the lens carrier since this is the arrangement taught in Oshawa.

Regarding Claims 9 and 10, the lead angles of the teeth of the rear means in Dennison, Jr. et al. and Oshawa are substantially equal to one another (See Oshawa; Figure 1). In addition it is clear that one skilled in the art would know how to set the actual lead angle in accordance with a chosen configuration, including a specific angle such as 3.5 degrees.

Regarding Claim 11, Dennison, Jr. et al. disclose a focusing device comprising a housing (20) having a distal and a proximal end with a substantially straight bore (23) extending therebetween; the recited first means (12) and second means (15); lens transport assembly (40)

within the bore and slidable bidirectionally therein toward and away from first and second windows, so as to adjust the focusing of an image passed by the focusing lens.

Dennison, Jr. et al. do not disclose the recited electromechanical means. However, as discussed with regard to Claim 1, in view of the teaching in Oshawa it would have been obvious to do so in order to improve the operability of the device and increase its focusing accuracy. (See Examiner's comments regarding Claim 1).

Regarding Claim 15, Dennison, Jr. et al. and Oshawa disclose an optical image-capturing device attached to the first means (Dennison, Jr. et al.; Column 8, Lines 67 - Column 9, Line 3).

Regarding Claim 16, Dennison, Jr. et al. and Oshawa disclose that the image capturing device is an endoscope (Dennison, Jr. et al.; Column 4, Lines 60-61).

Regarding Claims 17 and 18, Dennison, Jr. et al. and Oshawa disclose an image receiving apparatus which is a video camera attached to the second connecting means (Dennison, Jr. et al.; Column 4, Lines 60-61).

Regarding Claim 19, Dennison, Jr. et al. and Oshawa disclose that the housing includes first and transparent windows closing off the distal and proximal ends of the bore (Dennison, Jr. et al.; Figure 2, Items 32 and 92).

Regarding Claim 20, Dennison, Jr. et al. disclose an image viewing and focusing system comprising an image capturing device (12); a video camera (Column 4, Lines 60-61); the recited focusing coupler device (10); a housing (See Figure 2) with a lens transport assembly (40) movably disposed therein so as to move bidirectionally in response to a mechanical means (60); the housing having distal and proximal ends, and an internal surface defining a substantially straight bore (23) extending therebetween; the lens transport assembly having a lens carrier (40) containing a focusing lens and a cross sectional size and shape that makes it a close sliding fit in the bore (Figure 2).

Dennison, Jr. et al. do not disclose that the means for moving is electromechanical using a motor and gear means. However, as discussed with regard to Claim 1, in view of the teaching in Oshawa it would have been obvious to provide such a means in Dennison, Jr. et al. in order to improve the operability of the device and increase its focusing accuracy. (See Examiner's comments regarding Claim 1).

Regarding Claim 21, it would have been obvious to place the motor and gear means of Dennison, Jr. et al. and Oshawa within the housing since that is where the means for moving is located in Dennison, Jr et al.

Regarding Claim 22, the motor of Dennison, Jr et al. and Oshawa is contained in a motor housing (See Oshawa; Item 46).

Regarding Claims 23 and 24, Official Notice is given that it is well known in the art to employ a foot switch for controlling lens movement in an endoscope in order to free the hands of the user. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide in Dennison, Jr. et al. and Oshawa a foot switch by which to control movement of the motor in order to free the hands of the user when focusing the device.

Regarding Claim 25, Dennison, Jr et al. disclose a focusing coupler for coupling an endoscope with a video camera the coupler comprising the recited lens unit (40, 44); housing (Figure 2) having the recited cylindrical bore (23) and windows (32, 92); and a mechanical means (60) for moving the lens unit bidirectionally in the bore between the windows so as to adjust the focus of light passing through the lens.

Dennison, Jr. et al. do not disclose that the mechanical means is motor controlled. However, as discussed with regard to Claim 1, in view of the teaching in Oshawa it would have been obvious to provide such a means in Dennison, Jr. et al. in order to improve the operability of the device and increase its focusing accuracy. (See Examiner's comments regarding Claim 1).

3. Claims 2, 3, 12-14 and 26-27 are rejected under 35 USC 103(a) as being unpatentable over Dennison, Jr. et al. in view of Ohsawa and further in view of Yonezawa et al. (U.S. Patent No. 5,008,534).

Regarding Claim 2, Dennison, Jr. et al. and Oshawa disclose all of the limitations except

that of a biasing means. However Yonezawa et al. disclose such an arrangement (See Figure 2) and clearly would increase the focusing accuracy of Dennison, Jr. et al. and Oshawa by increasing the stability of the movement of the lens carrier, as taught in Yonezawa et al. (Column 2, Lines 47-50). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the recited biasing means in Dennison, Jr. et al. and Oshawa in order to increase the stability of the movement of the lens carrier, thereby increasing the accuracy of the focusing operation.

Regarding Claim 3, Yonezawa et al. disclose that the biasing means comprises a coil spring disposed in a bore between a stop adjacent one of the ends thereof and the lens carrier (See Figure 2).

Regarding Claim 12, Dennison, Jr. et al. and Oshawa disclose all of the limitations except that of a spring. However the provision of such in Dennison, Jr. et al. and Oshawa would have been obvious as discussed with regard to Claim 2.

As to Claim 13, see Examiner's comments regarding Claim 12 and note that the spring in Yonezawa et al. is disposed between what would be the distal end of Dennison, Jr. et al. and the adjacent end of the lens transport assembly (See Yonezawa et al.; Figure 2).

Regarding Claim 14, Dennison, Jr. et al. disclose a second internal stop adjacent the proximal end of the bore that clearly limits movement of the lens transport assembly toward that end (Figure 2, Item 92).

As to Claim 26, see Examiner's comments regarding Claims 1, 13 and 19.

As to Claim 27, see Examiner's comments regarding Claims 16 and 18.

4. Claim 4 is rejected under 35 USC 103(a) as being unpatentable over Dennison, Jr. et al. in view of Ohsawa and further in view of Lucey et al. (U.S. Patent No. 5,808,813).

Dennison, Jr. et al. disclose that the structural arrangement of the lens carrier may be configured in any of a variety of ways (Column 5, Lines 14-16) but do not specifically disclose windows closing off the open ends of the lens carrier. However such an arrangement is clearly encompassed within the variety of ways of Dennison, Jr. et al. and would have been obvious to one of ordinary skill in the art, as suggested by the configuration of the lens carrier in Lucey et al. (See Figure 6A; Item 44).

5. Claim 7 is rejected under 35 USC 103(a) as being unpatentable over Dennison, Jr. et al. in view of Ohsawa and further in view of Yata et al. (U.S. Patent No. 3,967,056).

Dennison, Jr. et al. and Oshawa disclose all of the limitations except that of drive shaft being disposed at an acute angle to the first longitudinal axis. However such a configuration is old

and well known in the art, as taught in Figure 10 of Yata et al. and therefore would have been to one skilled in the art an obvious variation of Dennison, Jr. et al and Ohsawa.

6. Claim 8 is rejected under 35 USC 103(a) as being unpatentable over Dennison, Jr. et al. in view of Ohsawa and further in view of Enomoto et al. (U.S. Patent No. 4,445,757).

Dennison, Jr. et al. and Oshawa disclose all of the limitations except that of the recited configuration including a second bore. However Enomoto et al. (See Figure 1) disclose a lens positioning arrangement wherein a pinion rear (15) is in meshing engagement with the teeth of a worm gear (14) and rack gear teeth (18). Such an arrangement would clearly have been recognized by one skilled in the art to be an obvious variation of Dennison, Jr. et al. and Oshawa since it accomplishes the same lens positioning operation. It would have been further obvious to provide a second bore for housing of pinion gear as a required additional part of the arrangement to include the pinion gear.

7. Claims 20-23 are rejected under 35 USC 103(a) as being unpatentable over Sasaki et al. (U.S. Patent No. 5,701,206).

Regarding Claim 20, Sasaki et al. disclose an image viewing and focusing system comprising an image capturing device (front aperture); a camera (Column 3, Line 45); the recited focusing coupler device (10); a housing with a lens transport assembly movably disposed therein so as to move bidirectionally in response to a mechanical means (Figure 1); the housing having

distal and proximal ends, and an internal surface defining a substantially straight bore extending therebetween; the lens transport assembly having a lens carrier containing a focusing lens and a cross sectional size and shape that makes it a close sliding fit in the bore (Figure 1), the electromechanical means comprising a reversible electric motor and gear means coupling the motor and the lens transport assembly for moving the lens transport assembly in the bore according to the direction of the reversible motor (Column 5, Lines 6-18).

Sasaki et al do not identify the camera as a video camera. However Official Notice is given that it is well known in the art to take pictures using a video camera, video cameras being of common use. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use a video camera in Sasaki et al. since such is a very well known and common means for picture taking.

Regarding Claims 21 and 22, Sasaki et al. disclose that the motor and gear means are contained within the housing and therefore are also clearly attached thereto (See Figure 1).

Regarding Claim 23, Sasaki et al. disclose a switch means for selectively controlling forward and reverse operation of the motor (Column 5, Lines 5-18).

8. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, DC 20231

or faxed to:

(703) 308-6306 (for informal or draft communications; please label "PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to Crystal Park 2, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

9. Any inquiry regarding this communication or earlier communications from the examiner should be directed to Andy Christensen whose telephone number is (703) 305-4197.

If attempts to reach the examiner by telephone are unsuccessful the examiner's supervisor, Wendy Garber, can be reached on (703) 305-4929.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

ac
August 10, 2000



ANDREW CHRISTENSEN
PATENT EXAMINER